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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/549,896

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EXAMINER

HUSSAIN, IMAD

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/549,896	Applicant(s) MOONEN, BENNY	
	Examiner IMAD HUSSAIN	Art Unit 2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>21 May 2008</u> . | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 September 2008 has been entered.
2. Applicant's amendment dated 15 September 2008 has been received and made of record.
3. Claims 1 and 8 have been amended. Claims 1-10 are pending in Application 10/549896.

Response to Arguments

4. Applicant's arguments filed 15 September 2008 have been fully considered but they are not persuasive.

Applicant argues that Stevens does not teach transmitting a second number of user data packets before there has been received a confirmation of receipt transmitted on receipt of a first number of user data packets.

Examiner respectfully disagrees with Applicant's interpretation of the prior art. Stevens, in Figure 21.7, makes clear that a second number of user data packets (those transmitted from slip.1024 at 54 and 55) are transmitted before there has been received

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a confirmation of receipt transmitted on receipt of a first number of user data packets (confirmation of packets transmitted from slip.1024 at 50 and 52 is not transmitted until events 61 and 62 from vangogh.discard; this confirmation is not received by slip.1024 until much later [note that the diagram is slightly different due to the lost segment 45, which causes duplicate acks]).

Applicant argues that Stevens does not disclose “a confirmation of receipt in respect of the first number of user data packets”, but only individual receipts of each of the first number of user data packets.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that a receipt is not transmitted after every packet, but *only after a number of* packets) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Examiner agrees that Stevens does not explicitly disclose delayed acknowledgements. However, this feature is explicitly disclosed by Aceves [Paragraph 0044], among others, who states that delayed acknowledgements are an inherent part of the TCP protocol. Moreover, under the standard TCP implementation, as explained by Stevens, packet acknowledgements are cumulative -- an ack for packet N+1 *inherently* acknowledges packets 1..N as well.

In the interests of advancing prosecution, Examiner has made an additional rejection using an explicit reference.

Applicant alleges that modifying the Stevens TCP Slow Start mechanism with delayed or cumulative acknowledgements “would render the device inoperative for its intended use.”

Examiner respectfully disagrees with Applicant. Delayed/cumulative acknowledgements are well known in the art and are disclosed as a standard option for TCP dating back at least to RFC 813 (July 1982). There is no reason to believe that slow start and delayed/cumulative acknowledgements are incompatible. Moreover, Aceves [Paragraph 0044], Cunningham et al. (US 2004/0003106 A1) [Paragraph 0007], Mascolo (US 2002/0085587 A1) [Paragraph 0034], and Sarkar et al. (US 2003/0126282 A1) [Paragraph 0015] all teach the use of the combination of slow start and delayed/cumulative acknowledgements.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by W. R. Stevens (“TCP Timeout and Retransmission”, listed on applicant’s IDS, hereafter *Stevens*).

Regarding claims 1 and 8, Stevens discloses *a device* [Page 301 Section 21.4, hosts slip and vangogh with respective timers] and associated *method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]; *transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets* [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52];

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55]; *and*

receiving a confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is defined such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets.*

Regarding claim 2, Stevens discloses that *the later time is defined such that the receiver receives the second number of user data packets* [Fig 21.2, segments 6 and 7] *after transmitting the confirmation of receipt* [Fig 21.2, segment 5].

Regarding claims 3 and 9, Stevens discloses that *the time period is a function of a time difference between transmission of a data packet by the transmitter and receipt of the data packet by the receiver* [Section 21.4, Round-Trip Time Measurements, wherein round-trip time approximates twice the time difference between the transmission by the transmitter and receipt by the receiver].

Regarding claim 5, Stevens discloses that *the user data packets are data from the internet* [Section 21.4, paragraph 3].

Regarding claim 7, Stevens discloses that *the second number* [Fig 21.2, segments 6 and 7] *of user data packets exceeds the first number* [Fig 21.2, segment 4] *of user data packets* [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Jose Joaquin Garcia-Luna-Aceves et al. (US 2002/0089930 A1, hereinafter Aceves).

Regarding claims 1 and 8, Stevens discloses *a device* [Page 301 Section 21.4, hosts slip and vangogh with respective timers] and associated *method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]; *transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets* [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52];

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55]; *and*

receiving confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is defined*

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such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets.

Stevens does not explicitly disclose receiving a (single) confirmation of receipt for the first number of user data packets.

However, Aceves teaches receiving a (single) confirmation of receipt for the first number of user data packets [Aceves: Paragraph 0044].

Stevens and Aceves are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the delayed acknowledgement scheme of Aceves for sending a single acknowledgement for multiple packets in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the delayed acknowledgement scheme of Aceves because in doing so, the system would allow for less bandwidth used by acknowledgements.

Regarding claim 2, the combination of Stevens and Aceves (hereinafter *Stevens-Aceves*) discloses that *the later time is defined such that the receiver receives the second number of user data packets [Fig 21.2, segments 6 and 7] after transmitting the confirmation of receipt [Fig 21.2, segment 5].*

Regarding claims 3 and 9, Stevens-Aceves discloses that *the time period is a function of a time difference between transmission of a data packet by the transmitter and*

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receipt of the data packet by the receiver [Section 21.4, Round-Trip Time

Measurements, wherein round-trip time approximates twice the time difference between the transmission by the transmitter and receipt by the receiver].

Regarding claim 5, Stevens-Aceves discloses that *the user data packets are data from the internet* [Section 21.4, paragraph 3].

Regarding claim 7, Stevens-Aceves discloses that *the second number* [Fig 21.2, segments 6 and 7] *of user data packets exceeds the first number* [Fig 21.2, segment 4] *of user data packets* [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions].

9. Claims 4, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens as applied to claims 1 and 8 above in further view of Karlsson et al (US 6,222,829 B1, hereafter *Karlsson*).

Regarding claims 4 and 10, Stevens-Aceves does not explicitly disclose that *the user data packets are transmitted by the transmitter to the receiver at least to some degree by radio*.

Karlsson discloses that “data packets associated with the packet data service are carried across the mobile radio network using packet-switched communications on a packet channel. For example... using TCP/IP” (Karlsson, column 1, lines 24-35).

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Stevens and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

Regarding claim 6, Stevens-Aceves does not explicitly disclose that *the receiver is part of a mobile radio communication system, and the transmitter is a device connected both to the mobile radio communication system and another network using a TCP protocol.*

Karlsson discloses that “packet data services are used to connect digital terminal equipment, such as a personal computer communicating through a mobile station operating in the mobile radio network, to an Internet Protocol (IP) communication network such as, for example, an Internet or an Intranet... For example, data packets can be carried on the packet channel using a Transmission Control Protocol/Internet Protocol (TCP/IP)” (Karlsson, column 1, lines 17-35, where the personal computer is the receiver and a node on the Internet is the transmitter).

Stevens and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens. One of ordinary skill in the art

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would have been motivated to modify the system of Stevens with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

10. Claims 4, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens-Aceves as applied to claims 1 and 8 above in further view of Karlsson et al (US 6,222,829 B1, hereafter *Karlsson*).

Regarding claims 4 and 10, Stevens-Aceves does not explicitly disclose that *the user data packets are transmitted by the transmitter to the receiver at least to some degree by radio*.

Karlsson discloses that “data packets associated with the packet data service are carried across the mobile radio network using packet-switched communications on a packet channel. For example... using TCP/IP” (Karlsson, column 1, lines 24-35).

Stevens-Aceves and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens-Aceves. One of ordinary skill in the art would have been motivated to modify the system of Stevens-Aceves with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

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Regarding claim 6, Stevens-Aceves does not explicitly disclose that *the receiver is part of a mobile radio communication system, and the transmitter is a device connected both to the mobile radio communication system and another network using a TCP protocol.*

Karlsson discloses that “packet data services are used to connect digital terminal equipment, such as a personal computer communicating through a mobile station operating in the mobile radio network, to an Internet Protocol (IP) communication network such as, for example, an Internet or an Intranet... For example, data packets can be carried on the packet channel using a Transmission Control Protocol/Internet Protocol (TCP/IP)” (Karlsson, column 1, lines 17-35, where the personal computer is the receiver and a node on the Internet is the transmitter).

Stevens-Aceves and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens-Aceves. One of ordinary skill in the art would have been motivated to modify the system of Stevens-Aceves with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

Conclusion

11. **Examiner’s Note:** Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings of the art and are

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applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the text of the passage taught by the prior art or disclosed by the examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IMAD HUSSAIN whose telephone number is (571) 270-3628. The examiner can normally be reached on Monday through Friday from 0800 to 1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IH/

Imad Hussain

Examiner, Art Unit 2451

/Salad Abdullahi/

Primary Examiner, Art Unit 2457